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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Federal-State Joint Board on
Universal Service

Forward-Looking Mechanism
for High Cost Support for
Non-Rural LECs

CC Docket No. 96-45

CC Docket No. 97-160

REPLY TO OPPOSITION TO PETITION FOR RECONSIDERATION

AT&T is the only party that opposes the petitions of Bell Atlantic,¹ BellSouth, GTE, and SBC for reconsideration of the Commission's decision in the Fifth Report and Order adopting a proxy model platform. This is not surprising, since the rest of the industry, including parties who previously supported the proxy model approach, made it clear in their comments on the Joint Board's Second Recommended Decision that the Commission's

¹ The Bell Atlantic telephone companies ("Bell Atlantic") are Bell Atlantic-Delaware, Inc.; Bell Atlantic-Maryland, Inc.; Bell Atlantic-New Jersey, Inc.; Bell Atlantic-Pennsylvania, Inc.; Bell Atlantic-Virginia, Inc.; Bell Atlantic-Washington, D.C., Inc.; Bell Atlantic-West Virginia, Inc.; New York Telephone Company; and New England Telephone and Telegraph Company.

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proxy model platform has too many technical and methodological flaws to be used to quantify or distribute high cost support.²

It is also clear that no party had an adequate opportunity to evaluate and comment upon the Commission's model before it was adopted. In its zeal to characterize the petitioners as chronic complainers about proxy models, AT&T ignores the fact that the Joint Board itself, almost a month after the Commission released the Fifth Report and Order, refused to recommend use of a proxy model for universal service, because the Commission's model was "not complete" and because it raised "significant uncertainties."³ Despite the fact that three months have passed since the model was adopted, no party, including AT&T, has ever claimed that it has been able to run the model or evaluate its outputs for reasonableness.

² See Reply Comments of Bell Atlantic on Second Recommended Decision (filed Jan. 13, 1999) at 1-2.

³ See Second Recommended Decision (rel. Nov. 25, 1998) at ¶¶ 28-29. The dissenting Joint Board members were more frank about shortcomings of the Commission's proxy model; "we will not use this tool unless it has achieved a level of accuracy, predictability, and openness that earns it broad acceptance" (Separate Statement of Commissioner Ness at 1); "we must make it clear that unless the model produces consistent and rational results we will recommend that the existing system be maintained" (Joint Statement of Chairman Johnson and Commissioner Baker at 2); "it is not clear to me that we have a record to make this recommendation. We have no model to work with at this point because the Commission has not determined the model's inputs" (Separate Statement of Commissioner Tristani at 1); "Just a few of the concerns that I have with this item include . . . the recommendation of a cost model without knowing results" (Dissenting Statement of Commissioner Furchtgott-Roth at 1); "I do not believe that we can make a determination that the model will provide a realistic estimate of the costs of providing the supported services" (Separate Statement of Commissioner Schoenfelder at 1).

On reconsideration, the Commission should withdraw its premature endorsement of the model. The Commission should provide another round of notice and comment after it has provided sufficient information to allow the public to run the model and evaluate its results against external measures of validity. In the interim, as the Joint Board has recommended, the Commission should continue to use existing mechanisms to provide high cost support.

I. The Record Still Is Inadequate To Allow Interested Parties To Run, Or Begin To Evaluate, The Commission's Model.

Despite AT&T's recitation of the numerous rounds of comments in this proceeding (*see* AT&T at 4-8), it is clear that no party had an opportunity to evaluate and comment on the Commission's model before it was adopted. The most revealing aspect of AT&T's opposition is that it fails to claim that any party, including AT&T, has been able to run the Commission's model, three months after it was adopted. This proves, without a doubt, that no party was able to evaluate the Commission's approach before it was adopted.

AT&T argues that there was no need for the Commission to solicit comments on its proxy model, because the model is made up of components that were "lifted" from three publicly-noticed models that have already been subject to notice and comment. *See* AT&T at 5-6. However, like any computer program, the Commission's model is more than the sum of its parts. There is no way to determine how the various components of the new model platform will interact, or what the results will be, without testing a complete version of the model. As Bell Atlantic demonstrated in its petition and in

previous filings, the earlier proxy models produced varying results by state that could not have been predicted simply by analyzing the logic of each model's methodology. *See, e.g.,* Bell Atlantic Petition For Reconsideration, Attachment; Comments of Bell Atlantic on New Proposals (filed May 15, 1998) Exhibit 2. AT&T does not dispute the fact that there is no way of predicting how the Commission's "synthesis" of the earlier models will perform based on this record.

Since Bell Atlantic filed its petition for reconsideration on December 18, 1998, it has continued to attempt to run the Commission's model, without any success. (*See* attached affidavit). The primary stumbling block has been the lack of "geocode" data on the latitude and longitude of each customer, which is the necessary starting point in running the model.⁴ As Bell Atlantic has stated in the past, it does not possess geocode data for its own service area, much less for customers of other carriers. *See* Reply Comments of Bell Atlantic (filed Jun. 12, 1998) at 4. Commercially available programs for converting billing names and addresses to geocode data have proven to be unreliable, especially for rural areas where many customers have rural delivery route addresses. *See id.* at 3. In addition, Bell Atlantic cannot apply such software to customers outside its service area, making nationwide comparisons impossible.

⁴ Customer location is not an "inputs" issue that can be resolved independently from the platform. The Commission has defined inputs as parameters that are user adjustable. *See Further Notice of Proposed Rulemaking*, 12 FCC Rcd 18514 (1997) at ¶¶ 17-18. Customer location is not a matter of choice that can be adjusted by the user – the model requires accurate geocoded data on actual customer locations as a pre-processing step. *See* GTE Petition for Reconsideration (filed Dec. 18, 1998) Affidavit of Francis J. Murphy at ¶ 23.

AT&T claims that geocoded data are available from PNR and Associates, citing statements to this effect in the Commission's order. *See* AT&T at 13-14; Fifth Report and Order at ¶ 34. However, the Commission's statement that "PNR's data is now available for review, and interested parties may comment upon and suggest improvements to the accuracy of that database" (Fifth Report and Order at ¶ 34) has not proven to be accurate. PNR's data may only be viewed at its own location, and cannot be removed, making it impractical for third parties to test the accuracy of individual customer locations. Citing concerns about the proprietary nature of its database, PNR has only released to Bell Atlantic "surrogate" geocode data, which represent random placement of customers within a wire center. PNR also has promised to send ".bin" files, which are the intermediate output of the clustering routine in the Commission's model platform, using "actual" geocode customer locations. *See* Affidavit at ¶¶ 8-9; Forward Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket No. 97-160, Order (rel. Dec. 17, 1998) at ¶ 10 & n.34. However, these ".bin" files cannot be "reverse programmed" to reveal the original geocode data. For this reason, it will be impossible to determine if any errors in the model's output are due to flaws in the platform design or to inaccuracies in the geocode data base.

Bell Atlantic only received a copy of the "surrogate" files from PNR last week, and our initial review has revealed glaring omissions. The data exclude some of the wire centers in 23 states, and several states are missing entirely. *See* Affidavit at ¶ 9. Even at this late date, it is not possible to run the Commission's model on a nationwide basis, or even for more than half of the states.

AT&T cannot seriously contend that the public has been given an adequate opportunity to comment on the proxy model platform if no person outside the Commission has been able, despite months of effort, to run the model. Clearly, the Commission's adoption of this model was premature, and procedurally defective. The Commission must cure this procedural defect by allowing another round of comments after it releases sufficient data to allow the public to run the model and evaluate both its methodology and results.

II. A Proxy Model Cannot Be Evaluated Or Adopted In The Abstract – Its Results Must Be Tested Against External Measures For Reasonableness.

In its petition for reconsideration, Bell Atlantic argued that the Commission should make it clear that one of the tests of a proxy model will be the correlation between the model's output and actual data. *See* Bell Atlantic Petition For Reconsideration at 10-11.

AT&T disagrees, arguing that a model platform can be adopted in the abstract, based on the logic of its design, without testing its outputs for reasonableness. *See* AT&T at 8-9.

However, regardless of how logical or reasonable a model's algorithms may appear, it is nothing more than a grossly simplified representation of a very complex network. The validity of a proxy model can only be determined by comparing its output to some external measure of reasonableness.

The Commission's model platform, like the proxy models that preceded it, takes into account only a handful of geographic variables in designing outside plant – “geocoded” customer locations, existing wire center locations, soil type, depth to bedrock, and slope.

See Fifth Report and Order at ¶ 59. Roads are used only to distribute customers whose locations cannot be geocoded. See id. at ¶ 40. Aside from these factors, the model assumes a featureless abstract landscape where cable can be run in any direction or routing. In reality, network engineers must take into account numerous variables in designing each route, including available rights of way along, or under, streets and highways; natural obstacles such as mountains, rivers, and parks; building types (high rise, low rise, or single family); zoning rules, etc. No model can design routings that could actually be constructed in a particular locality. For any actual routing, a model is likely to run cable through buildings and mountains, over rivers, and across private property. However, at some level of aggregation, a properly designed proxy model might be able to approximate the cost of actually constructing plant in a given geographic area.

The only way to know if a model is accurate, and at what level it approximates actual forward-looking cost, is to test it. External measures of validation include whether the number of lines in wire center match actual line counts, and whether the model's loop lengths approximate actual loop lengths. This is why the Commission's original Universal Service Order listed these as the first criteria for evaluating the accuracy of any proxy model. See Universal Service Order, 12 FCC Rcd 8776 at ¶ 250 (1997). To date, no party has been able to ascertain whether the Commission's model meets these criteria, or any other external measure of accuracy. Until the record shows conclusively that the Commission's own criteria are met, the Commission cannot reasonably approve the model.

AT&T argues that the Commission was correct to abandon this reality check in the Fifth Report and Order, since it applied only to evaluation of proxy models that were

proposed by other parties, and is no longer relevant now that the Commission has adopted its own model. AT&T at 16-17. This directly contradicts the Commission's finding that the criteria in the Universal Service Order apply to any "Commission-determined" forward looking cost model (*see* Universal Service Order at ¶ 250). Moreover, since the Commission's model is a synthesis of previous models, none of which could reasonably approximate actual line counts or loop lengths (*see, e.g.*, Comments of Bell Atlantic on Hybrid Cost Proxy Model (filed Nov. 26, 1997) at 6), there is no basis for concluding that the Commission's model performs any better.

AT&T claims that these criticisms are irrelevant, because "nothing prevents [the model] from producing wire center counts equal to actual wire center counts," and that "neither theory nor evidence demonstrat[es] that the synthesis model, once populated with suitable input data, will not produce average loop lengths that appropriately 'reflect' actual average loop lengths." AT&T at 12. However, the Commission cannot defend the accuracy of the model by arguing that no party has proven it inaccurate, especially when the parties were not given the information necessary to test the model. The Commission has an affirmative responsibility to show that its findings are "supported by substantial evidence and based on a 'reasoned consideration' of that evidence." *See AT&T v. FCC*, 572 F.2d 17, 23 (2nd Cir. 1978); Administrative Procedure Act, 5 U.S.C. Section 706(2)(A). AT&T does not deny the fact that there is no evidence on the record to demonstrate that the Commission has met that standard.

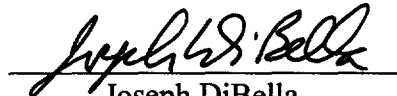
For these reasons, the Commission is compelled, by law and sound policy, to conduct a further round of notice and comment before finally adopting any proxy model.

III. Conclusion

On reconsideration, the Commission should withdraw its adoption of the cost proxy model platform and allow an opportunity for further comment after the model is complete and all variables are specified.

Michael E. Glover
Of Counsel

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Joseph DiBella", is written over a horizontal line.

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Attorney for the Bell Atlantic
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Dated: January 28, 1999

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Federal-State Joint Board on
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Affidavit of Jacqueline McGirr-Conti

Introduction

1. I am Jacqueline McGirr-Conti, Senior Specialist, Regulatory and Long Range Planning, for the Bell Atlantic telephone companies. In my current position, I am responsible for analysis of proxy models and universal service related issues. For over three years, I have evaluated various proxy model proposals at both a technical and policy level. I submit this affidavit for the purpose of describing Bell Atlantic's efforts to understand and test the proxy model platform that the Commission adopted in the Fifth Report and Order.

2. The Commission's proxy model platform is an outgrowth of the staff's previous Hybrid Cost Proxy Model ("HCPM") as well as modules from other proxy models. Shortly after the Commission posted the proxy model platform on its web site on November 18, 1998, Bell Atlantic downloaded a copy for analysis. The Commission posted revisions to the model on December 7 and 15, 1998, and again on January 5 and 19, 1999, which I also examined. The latest version is labeled HCPM 2.6. These

frequent revisions have hampered Bell Atlantic's efforts to analyze the model, as computer processing must begin over again with each iteration.

3. There are mismatches between the wire centers in the HCPM outside plant module and the wire centers in the HAI switching module. This causes the program to stop working as expected. In some cases, it is possible to get past the mismatch, but then the output report of the HAI module is invalid, because it does not include all wire centers. In other cases, the program simply stops responding.

4. Analysis also was hampered by the inadequate documentation that accompanied the model. The documentation did not include simple steps that the user would need to follow in order to run the model. For example, users were not informed that the HCPM would only run if the state specific geocoded data were saved in a zip format. This step was not obvious to the user. In addition, the model takes an inordinately long time to run, which makes it extremely difficult and time consuming to analyze the model for more than a few states, or to run sensitivity analyses. For example, it took over 4 hours to run Mountain Bell in Colorado, and over 8 hours to run South Central Bell in Tennessee, on a 300 mhz personal computer with 48 mg of memory. A nationwide run would take weeks at best, even if there were no processing problems. Since the Commission posts an update of the model on its Web site every two weeks, by the time that the model is run, the results may be invalid due to subsequent changes in the model.

5. My analysis was hampered by the fact that the initial versions had programming errors. For example, the initial program produced an error message in the "Calculate Feeder & Distribution" module, which was not corrected until the January 5

version. Users who received this error message had to abort the program and lose all company-specific data that were completed prior to the error message. The January 19 version, in turn, did not include two files (checkmsg.txt and hcpm.mdb). This necessitated calls to the Commission staff and downloading of a new, corrected version of the model, a process that takes roughly five hours via modem.

6. The Commission's model cannot be run at all without input data consisting of "geocode" customer locations. Since Bell Atlantic does not have geocode data for its own customers, much less for customers of the hundreds of large and small local telephone companies throughout the nation, Bell Atlantic has evaluated outside sources. Bell Atlantic looked at commercially-available computer programs that convert customer billing addresses to geocode longitude and latitude, but has not found this approach promising, due to differences between billing addresses and actual locations, and due to the fact that many billing addresses, such as rural route addresses, cannot be converted to geocodes. Also, this methodology is not practical for customers outside of Bell Atlantic's service area, which prevents nationwide analyses and comparisons to current funding mechanisms.

7. Bell Atlantic has tried to obtain geocode data from PNR and Associates, which was cited in the Fifth Report and Order as the source of geocode data used by the Commission's staff. Citing concerns about the proprietary nature of its database, PNR has not released the database to third parties. Initially, PNR would only allow parties to access PNR's data at its location in Pennsylvania, on PNR's computers, for \$3,000 per day, per computer. Due to the model's long run times, poor documentation, and programming errors, as described above, it has not been practical to run the model on

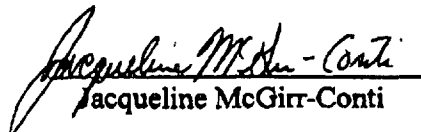
PNR's premises. In addition, these restrictions make it extremely difficult to assess the accuracy of the geocode data itself.

8. On December 17, 1998, PNR filed a letter with the Commission offering to make two types of geocode data available to third parties. The first is "surrogate" geocode data, generated through random placement of customers in each wire center. While these data allow the model to be run, the results of the model cannot be compared to actual data, since any differences could be due to the random distribution of customer locations, rather than to problems with the model platform. The second are ".bin" files consisting of the intermediate output of the HCPM clustering routine using the "actual" PNR geocode database. While these files also allow the model to be run, the output of the model again cannot be assessed properly, since there is no way of determining whether problems in the model's outputs are due to errors in the geocode database or in the platform.

9. Early in January 1999, Bell Atlantic asked PNR to send a copy of the ".bin" files. Between January 18-20, 1999, PNR sent Bell Atlantic a copy of "surrogate" geocode data inputs for the HCPM, indicating that the ".bin" files would be provided at a later date. Due to the model's long run times, we have only begun running the model with the "surrogate" PNR data. There are obvious omissions and discrepancies in these data that will prevent a complete run of the model. Many wire centers are missing in 23 states, and four states and Puerto Rico are missing entirely. In some cases, it is impossible to access data for some companies in a given state, and in some cases apparently for all companies in a state. These omissions and errors make it impossible to produce an accurate picture of how the model identifies high cost areas and distributes

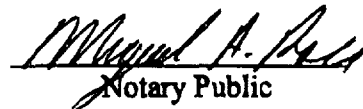
support among the states, in comparison to the current funding mechanism. Moreover, the use of surrogate data will preclude any final conclusions, since we will not be able to determine whether any errors or problems with the results of the model are due to the lack of actual geocode data or to flaws in the model platform.

I hereby swear, under penalty of perjury of the laws of the United States, that the foregoing is true and correct to the best of my knowledge and belief.


Jacqueline McGirr-Conti

Subscribed and sworn before me this 28th day of January, 1999.


My Commission expires 2000.


Notary Public

MIQUEL A. ROSA
Notary Public, State of New York
No. 43-4771861
Qualified in Kings County
Certificate Filed in New York County
Commission Expires Nov. 30, 2000

CERTIFICATE OF SERVICE

I hereby certify that on this 28th day of January, 1999, copies of the foregoing "Reply to Opposition to Petition for Reconsideration" were sent by first class mail, postage prepaid, to the parties on the attached list.



Jennifer L. Hoh

* Via hand delivery.

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